Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

967
C78

VOL. 6 No.7 FEBRUARY 17, 1956

BAP

Entomology Research Branch
RECEIVED
☆ FEB 21 1956 ☆
FRUIT INSECTS
SECTION

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 6 February 17, 1956 No. 7

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

ALFALFA WEEVIL outlook in New Jersey for 1956. (p. 114).

Spotted heavy populations of WINTER GRAIN MITE in small grains in area between Falls and Cooke Counties, Texas. (p. 114).

Infestation and damage by CORN EARWORM to dent corn in Illinois in 1955. (p. 113).

TRUCK CROP INSECTS situation in Rio Grande Valley, Texas. (p. 115).

SWEETPOTATO WEEVIL found in five new counties of Georgia. (p. 115).

EASTERN TENT CATERPILLAR hatching at Gainesville, Florida. (p. 116).

SUMMARY OF INSECT CONDITIONS - 1955 - in Oregon (p. 120), Washington (p. 127), Illinois (p. 131).

****

Reports in this issue are for the week ending February 10, 1956, unless otherwise designated.

WEATHER FOR THE WEEK ENDING FEBRUARY 13, 1956

A persistent high level trough moving slowly eastward across the country set the weather pattern for the week. Above normal temperatures generally prevailed northeast of a line from Tallahassee, Fla., to Missoula, Mont., and below normal elsewhere except along the California coast. Repeating patterns of weak low pressure systems moved eastward across the Gulf States and turned northeastward. The general rains accompanying these systems replenished much needed moisture in the topsoil and brightened the moisture picture east of the Mississippi River. Moderate winter temperatures set in over the eastern portion of the country with resultant melting of snow on the ground and disappearance of frozen ground as far north as the Ohio and Missouri Valleys. Temperatures in the 30's decreased the snow cover in the Northern States as extreme northern North Dakota reported temperatures for the week 15° above normal. The area of the western mountains and plateaus had below normal temperatures for the week. New Mexico and west Texas reported temperatures as much as 15° below normal retarding the growth of winter crops and necessitating firing in the citrus orchards. Precipitation in the eastern portion of the country further replenished needed soil moisture. Springs and wells which had been dry in West Virginia were reported as producing again, although more rain is needed to increase the ground water storage. The eastern Plains States welcomed light precipitation as a replenishment for topsoil moisture, although more rain is needed to build up reserves.

The snow cover has receded northward considerably in the past week, especially just east of the Continental Divide. Snow accumulations in the mountains of the West remain very favorable and depths of as much as 15 inches were added in Arizona and New Mexico. Outlook for irrigation water next season continues very bright in the northwest. River ice shows some decrease in depth. In New England, Greenville, Maine, reports 30 inches; Concord, N. H., 14 inches and Holyoke, Mass., 4 inches. On the Mississippi-Missouri system Minneapolis reports 9 inches; Huron, 25 inches; Bismark, 27 inches and Williston, N. Dak., 34 1/2 inches. (Summary Supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

Infestation and Damage by the Corn Earworm to Dent Corn in Illinois-1955

A survey similar to those made in 1953 and 1954 was carried out during the fall of 1955 to determine the severity of damage by the corn earworm to dent corn in Illinois. A total of 99 fields were sampled. Five random samples of 10 ears each were examined in each field. The ears were examined rapidly by slitting the husks with a knife and opening them so the ears could be observed without removing them from the stalks. Each infested ear was assigned a class from 1 to 5 according to severity of damage by the corn earworm. Two types of damage occurred over much of the area surveyed: (1) early or green corn damage, and (2) late or dry corn damage. Both types of damage often occurred on the same ear, in which case the ear was assigned a class for both early and late damage. The percentage of loss due to the different classes of damage was determined in 1953 and 1954 by counting spaces where kernels had been eaten and destroyed by disease or partly destroyed in the case of dry corn damage. The same numbers of undamaged kernels from adjacent locations of the ears were weighed. Accurate estimates of percentages of loss represented by the damage classes were obtained in this manner from 108 ears representing the five classes of green corn damage and 28 ears representing classes 2 to 5 of dry corn damage. The average loss was 0.27, 1.34, 4.11, 8.01, and 16.38 percent for classes 1 to 5, respectively, of green corn damage and 0.71, 1.64, 2.96, and 4.54 for classes 2 to 5, respectively, of dry corn damage. These figures were used in estimating the loss in 1955.

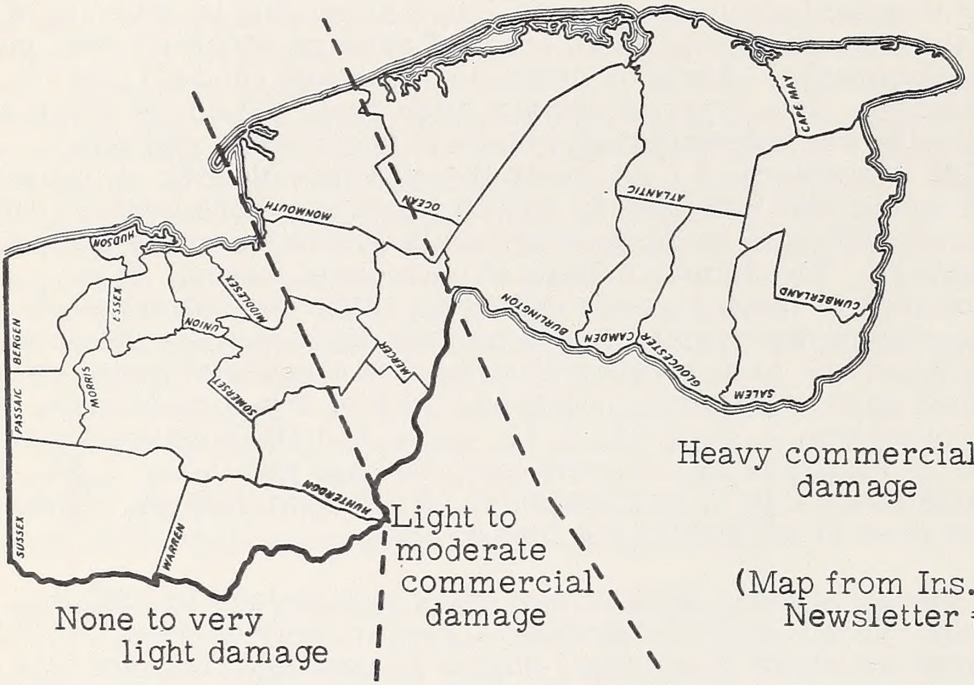
Damage by the earworm in Illinois was much less severe in 1955 than in 1953 and 1954. The total loss exceeded 1 percent only between the 37th and 39th parallels where it averaged only 2.97 percent. Damage was over 1 percent only in agricultural districts 7, 9, and 4A represented by the 12 southwestern, 12 southeastern and 13 west south central counties of Illinois, respectively. Total losses were 3.60, 3.33 and 1.26 percent, respectively, with an average loss of 2.68 percent for the three districts. The estimated average loss for Illinois as a whole was 1.30 percent of the crop. Figures on the yield of corn in Illinois for 1955 are not yet available although it is known that the crop was one of the largest on record. The value of the crop is also uncertain at this time. It was decided that the figures for 1954 might be used for comparative purposes. On that basis corn lost in 1955, if saved and sold at current market price, would have been worth $3,974,181 as compared with losses of $10,144,000 in 1953 and $19,155,000 in 1954. The greatest monetary loss as well as the largest percent of loss occurred in district 9, the 12 southeastern counties. The next greatest monetary loss occurred in district 5, 11 north central counties, in which loss of only 0.74 percent amounted to $781,003 because of the high production in that district. (Blanchard, Bigger).

CUTWORMS - OKLAHOMA - Extensive spraying for cutworms in wheat in Major County. (Stiles).

WINTER GRAIN MITE (Penthaleus major) - TEXAS - Spotted heavy populations in many fields of small grain in Denton, Cooke, Grayson, Fannin, Hunt, Navarro, Falls and McLennan Counties. (Davis, Randolph).

* *

Probable Alfalfa Weevil Damage for New Jersey in 1956
Based on 1955 Fall Egg Survey



(Map from Ins.-Dis. Newsletter #123)

* *

SPOTTED ALFALFA APHID - CALIFORNIA - Moderate infestations occurred in the desert area of San Diego County but along the coast and intermediate areas population was low. In Los Angeles County infestations were moderate. This condition is about a month later than expected. Infestations in Imperial, Alameda and San Joaquin Counties were light, and in Kings County infestations were county-wide. Populations remained high in Kern County. (Cal. Coop. Rept. Jan. 20-31). UTAH - Numerous in Millard County alfalfa fields up to February 1. (Rickenback, Knowlton). TEXAS - Light to medium populations on alfalfa in Denton, Grayson, Fannin, Hunt, Navarro, Brazos and Burleson Counties. (Davis, Randolph).

TEXAS LEAF-CUTTING ANT (Atta texana) - TEXAS - Damaging alfalfa in Uvalde County. (Fuller).

FRUIT INSECTS

OLIVE SCALE (Parlatoria oleae) - CALIFORNIA - Moderate infestations in deciduous orchards in east Fresno County. Light infestations in pear and peach orchards in San Joaquin County. (Cal. Coop. Rept. Jan. 20-31).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Two adults taken Jan. 31 from traps operated in citrus orchards. One specimen was taken from a grove in Hidalgo County and one from a grove in Cameron County. These represented the first specimens this season which is considerably later than average. First specimen taken during 1954-55 crop year was on December 17. (Mexican Fruit fly and Citrus Blackfly Control Project).

SOFT SCALE (Coccus hesperidum) - CALIFORNIA - Population heavy in a 90-acre citrus grove in the San Fernando Valley of Los Angeles County. Parasites not present. (Cal. Coop. Rept. Jan. 20-31)

TRUCK CROP INSECTS

Truck Crop Insect Situation, Rio Grande Valley, Texas

A FALSE CHINCH BUG (Nysius sp.) - Very heavy populations in many fields of lettuce, turnips and beets. A LETTUCE APHID (Macrosiphum ambrosiae) - Medium populations on lettuce. CORN EARWORM (Heliothis zea) - A few larvae found in matured lettuce heads. DIAMONDBACK MOTH (Plutella maculipennis) - Larvae found in cabbage and broccoli. CABBAGE LOOPER (Trichoplusia ni) - Light infestations of advanced-stage larvae in cabbage and broccoli. CABBAGE APHID (Brevicoryne brassicae) has increased considerably. ONION THRIPS (Thrips tabaci) populations continue to average about one thrips per onion plant. DARKLING BEETLES - Local very heavy infestation damaging a tomato field in the Mission area. A SERPENTINE LEAF MINER (Liriomyza sp.) lightly infesting cotyledon leaves of tomatoes. (Wene, Deer).

ROOT APHIDS - TEXAS - Medium to heavy populations on roots of cabbage in San Patricio County. (Pawlik).

CUTWORMS - CALIFORNIA - Heavy infestations in artichoke fields in Santa Cruz County. (Cal. Coop. Rept., Jan. 20-31).

ARTICHOKE PLUME MOTH (Platyptilia carduidactyla) - CALIFORNIA - Less than ten percent damage reported in San Mateo County artichoke fields. (Cal. Coop. Rept., Jan. 20-31).

CABBAGE APHID (Brevicoryne brassicae) - CALIFORNIA - A 10 percent loss to cole crops in San Diego County. (Cal. Coop. Rept., Jan. 20-31).

Sweetpotato Weevil Situation, January 1956

During the month, infestations found for first time in five Georgia counties: Beckley, Dodge, Harris, Pulaski, and Troup. Delimitation has revealed only nine infested properties in these five counties. Calhoun County, Florida, was found to be infested for the first time since 1943. (Sweetpotato Weevil Program.

COTTON INSECTS

Pink Bollworm Survey, January 16-31

Inspections of surface debris was conducted in three counties in ARKANSAS, one in OKLAHOMA and 44 in TEXAS. Oklahoma and Arkansas counties were negative while of 44 counties in Texas, 18 were negative. Material collected from 401 fields in Texas showed 78 or 19 percent infested with live pink bollworms. For four Rio Grande Valley counties of Texas, the rate for 1955 crop was 1.6 live pink bollworms per acre compared with 8.6 for the previous year. Further up the coast in this State where drought conditions were more severe inspections of debris thus far this year have shown an average of 252 live pink bollworms per acre compared with 9.2 in the winter of 1954-55. Bolls from standing stalks were inspected from 13 Texas counties most of which were outside the cultural control area. In the 13 counties, 4 were negative and 9 positive. A total of 648 live bollworms were found with 572 or 88 percent of them being taken from Ellis, Erath, and Navarro Counties. (Pink Bollworm Control Project).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

PINE ENGRAVER (Ips pini) - PENNSYLVANIA - Seventy-five to one hundred 15-20 foot red pines killed on dry hillside in Clearfield County. (Adams).

A BILLBUG (Rhynchophorus cruentatus) - FLORIDA - Collected in larval and adult stages on palm trees at Wildwood, Sumter County. Reported to have killed two large palm trees. Trees may have been weakened previously. (Det. L. A. Hetrick). (Denmark).

PINE TUBE MOTH (Argyrotaenia pinatubana) - DELAWARE - Tubes with pupae abundant on white pine at Dover. (Milliron)

PINE BARK APHID (Pineus strobi) - PENNSYLVANIA - Light infestation in Armstrong County and moderate infestation in Centre County. (Adams, February 1).

BAGWORM (Thyridopteryx ephemeraeformis) - PENNSYLVANIA - Very heavy overwintering population in parts of Allegheny, Westmoreland, Armstrong, and Washington Counties. (Jeffrey).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - FLORIDA - Egg masses hatching in Gainesville, Alachua County, on wild cherry. Not as abundant as in preceding years. (Det. L. A. Hetrick). (Denmark).

GREEDY SCALE (Aspidiotus camelliae) - CALIFORNIA - A heavy infestation on a large stock of camellias was reported in San Mateo County. (Cal. Coop. Rept., Jan. 20-31).

CAMELLIA SCALE (Lepidosaphes camelliae) - CALIFORNIA - Heavy infestations on camellia shrubs in San Joaquin County. (Cal. Coop. Rept., Jan. 20-31).

A SCALE (Chrysomphalus bifasciculatus) - CALIFORNIA - A heavy infestation reported in San Joaquin County. (Cal. Coop. Rept., Jan. 20-31).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Generally infesting untreated cattle in Wasatch County. Cattle dipped or sprayed last fall relatively free of lice. (Daniels, Knowlton). VIRGINIA - Cattle lice (Solenoptes capillatus, Haematopinus eurysternus and Bovicola bovis) heavy on beef cattle examined at the V. P. I. farm at Blacksburg. (Turner, Raffensperger). NORTH DAKOTA - Survey in western Cass County showed cattle biting lice at the following levels: 20 percent medium infestation; 13 percent light infestation; 67 percent no infestation. A medium infestation of cattle lice (biting and sucking) was found in a herd near Wheatland. (N. D. Ins. Rept. Serv.).

CATTLE GRUBS - UTAH - Few appearing in backs of cattle in Wasatch County. No large infestations noticed. (Daniels). VIRGINIA - Medium to heavy in the backs of cattle in Accomac County. (Rogers). OKLAHOMA - A survey of 157 head of cattle at the major meat packing establishments in Oklahoma City showed a rapid decline in the number of grubs per animal from that of a few weeks ago. Fifty-eight cows averaged 2.7 grubs per animal, 36 yearling heifers and steers averaged 3.2, 56 two-year-old heifers averaged 3.8, and 7 two-year-old steers averaged 1.1 grubs per animal. (Coppock).

BED BUG (Cimex lectularius) - DELAWARE - Severe infestation in home in Wilmington in late January. (Milliron).

FLIES - ARIZONA - Flies (mainly Musca domestica): population indices of two small towns in southeast Maricopa and northwest Pinal Counties; average of 5 highest grill counts in 9 blocks for week January 29-February 4: 17.6. (Ariz. Coop. Rept.).

TROPICAL RAT MITE (Bdellonyssus bacoti) - DELAWARE - Numerous at Georgetown in house where recent rodent control was performed. (Milliron).

STORED PRODUCT INSECTS

GRANARY WEEVIL (*Sitophilus granarius*) - ARIZONA - Heavy infestation of farm-storage wheat in Kingman causing extensive damage. (Ariz. Coop. Rept., Jan. 24).

STORED GRAIN INSECTS - OKLAHOMA - Of seven stored-grain establishments checked in central Oklahoma, four were infested. CADELLE was reported from three locations; RICE WEEVIL, LESSER GRAIN BORER, and CONFUSED FLOUR BEETLE from one location each. The latter insect was doing economic damage to mill products. (Coppock).

DRUG-STORE BEETLE (*Stegobium paniceum*) - CALIFORNIA - Moderate infestations in households in Humboldt County. (Cal. Coop. Rept., Jan. 20-31).

MISCELLANEOUS INSECTS

BOXELDER BUG (*Leptocoris trivittatus*) - MARYLAND - Adults causing nuisance in home. Elkridge, Baltimore County. February 7. (U. of Md. Ent. Dept.)

OLD HOUSE BORER (*Hylotrupes bajulus*) - VIRGINIA - Severely damaged the rafters in a school building in Wytheville. Rafters reported as completely pulverized. (Matheny). PENNSYLVANIA - Attacking joists in homes in Clinton County, December 28, and Cumberland County, January 30. (Gesell, Thompson).

Light Trap Collections:
TEXAS (College Station, 2/6-2/9/56): *Pseudaletia unipuncta*, 3; *Prodenia ornithogalli*, 4; *Agrotis malefida* 3. (Beaumont, 1/16-1/28/56): *P. unipuncta*, 28; *Laphygma frugiperda*, 3; *Agrotis ypsilon*, 4; *P. ornithogalli*, 8. ARKANSAS (Stuttgart, 1/12-2/2/56): *P. unipuncta*, 2; *A. ypsilon*, 4. (Varner, 1/19-2/8/56): *A. ypsilon*, 1; *Peridroma margaritosa*, 1. GEORGIA (Tifton, 1/28-2/3/56): *P. unipuncta*, 3; *Feltia subterranea*, 7; *A. malefida*, 2; *A. ypsilon*, 1; *P. ornithogalli*, 2. ALABAMA (Auburn, 2/5-2/11/56): *A. malefida*, 1; *L. frugiperda*, 1.

ADDITIONAL NOTES

GEORGIA - GREENBUG - Infestation heavy on oats in Ben Hill County. (Davenport, Feb. 7). CITRUS MEALYBUG - Moderate infestation on greenhouse plants in Bulloch, Candler and Toombs Counties. VEGETABLE WEEVIL - Infesting turnips in southeastern counties. (Greene).

ARKANSAS - APHIDS - (*Cinara watsoni* and *Essigella pini*) - Infestations on pine in Johnson County. (Det. H. B. Boudreaux).

STORED GRAIN INSECTS - Eighty-one bins of grain examined in January revealed 10 infested with SAW-TOOTHED GRAIN BEETLE; FLAT GRAIN BEETLE - 3 bins; *Tribolium* sp. - 2 bins; INDIAN MEAL MOTH - 1 bin; and LESSER GRAIN BORER - 1 bin. (Warren).

SUMMARY OF INSECT CONDITIONS - 1955

OREGON

Reported by Joseph Capizzi with the assistance of entomologists from Oregon State College, State and Federal Experiment Stations, State Department of Agriculture at Salem and other organizations.

Forage and Cereal Crop Insects

PEA LEAF WEEVIL (*Sitona lineata*) continued to extend its range southward near Salem and Monmouth. Damage to red clover was reported in Washington County. Populations of ALFALFA WEEVIL (*Hypera postica*) appeared normal. In Harney County, a 25 to 50 percent loss of hay crop was attributed to lack of control of this pest. The first record of the SWEETCLOVER WEEVIL (*Sitona cylindricollis*) in central Oregon was received from Deschutes County. CLOVER SEED WEEVIL (*Miccotrogus picirostris*) and CLOVER ROOT CURCULIO (*Sitona hispidula*) were minor pests in 1955. CLOVER ROOT BORER (*Hylastinus obscurus*) caused serious damage in the Willamette Valley and in Malheur County. A noticeable increase occurred near Blachly on red clover. This borer has made clover growing unprofitable in parts of Lane County. BLISTER BEETLES (*Epicauta* sp.) were more abundant generally than in 1954 and especially in Morrow, Josephine, and Klamath Counties. VETCH BRUCHID (*Bruchus brachialis*) was more plentiful than for several years in the Willamette Valley. CLOVER SEED MIDGE (*Dasyneura leguminicola*) populations were drastically reduced as a result of drought and winter kill in Jefferson and Klamath Counties. Estimated reduction at Culver was 80 percent. Normal infestations of CLOVER APHID (*Anuraphis bakeri*) were present in central Oregon but in Malheur County the worst outbreak in several years occurred. ENGLISH GRAIN APHID (*Macrosiphum granarium*), as in 1954, was quite injurious to grass crops. A SAP BEETLE (*Meligethes nigrescens*) was in normal numbers with some high populations on red clover in the Willamette Valley. A GRASS STEM MINOR (*Phytomyza nigra*), an occasional pest in grasses, caused alarm among growers in Clackamas and Multnomah Counties. Some wheat fields in Polk County were damaged by OMNIVEROUS LEAF TIER (*Cnephasia longana*). Low level and spotty infestations of the PEA APHID (*Macrosiphum pisi*) occurred in the Blue Mountains area but no serious attacks were noted in the Willamette Valley. MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) was common in legume crops throughout the Willamette Valley and reports of damage were received from Douglas County. The GROUND MEALYBUG (*Rhizoecus falcifer*) caused serious injury to bluegrass near Medford and in Union County. Only spring plantings were attacked. Also in Union County the DATE MITE (*Oligonychus pratensis*) damaged seed acreage to the extent that control work was necessary. In addition, injury to bluegrass was associated with THRIPS in this county. Union County had increased infestations of GRASS MOTHS (*Crambus dorsipunctellus* and *C. plumbifimbriellus*) in grass and seed growing areas. Localized outbreaks of the GLASSY

CUTWORM (Crymodes devastator) were observed on alfalfa in Deschutes County and on bluegrass in Union County. SPIDER MITES (Tetranychus telarius and Bryobia praetiosa) were not abundant on field crops except for a few fields in Malheur County. Presence of MEADOW PLANT BUG (Leptopterna dolobratus) was recorded for the State. This species was collected on fescue in quantity near Springwater. MORMON CRICKET (Anabrus simplex) was a non-economic pest in Gilliam, Morrow, Baker and Wallowa Counties. Based on the 1955 GRASSHOPPER surveys made by the U. S. D. A., there are approximately 422,500 acres of infested rangeland in Oregon. Of this, 385,000 acres are privately owned, 2,300 acres state owned and 35,000 acres under federal jurisdiction. The cropland infestation is estimated as being approximately 14,000 acres. Counties in which the heaviest infestation occur are Wallowa, Grant, Morrow and Baker. The dominant species of grasshoppers are Camnula pellucida and Melanoplus mexicanus. Parasites and predators were not generally observed to have been significant factors in the reductions of grasshopper populations. Larvae of a NEMESTRINID (Neorhynihocephalus sackenii) was responsible for 50 to 90 percent parasitism of M. mexicanus and 98 percent of M. bivittatus in one area of Morrow County. (Previously reported CEIR Sept. 2, 1955). Results of the 1955 control work were satisfactory.

Fruit and Nut Insects

APPLE APHID (Aphis pomi) was not of economic importance in 1955. PEAR LEAF BLISTER MITE (Eriophyes pyri) was commonly found but a delayed dormant spray program held populations to a low level. EYE-SPOTTED BUD MOTH (Spilonota ocellana) was not abundant but caused some damage to prunes and cherries in the Willamette Valley. The outlook is for considerably more damage in 1956 unless control measures are undertaken. Low infestations of CODLING MOTH (Carpocapsa pomonella) were reported from all parts of the State. At The Dalles and Hood River, low populations were found even in unsprayed orchards. PEAR-SLUG (Caliroa cerasi) was rarely seen at Hood River but was very damaging in all other areas where not controlled. WOOLLY APPLE APHID (Eriosoma lanigerum) was quite common in the Willamette Valley and rare in the Medford area. It is believed that parasites are effectively controlling this pest in the southern part of the State. PEAR PSYLLA (Psylla pyricola) did little damage to the pear crop since the control program is extremely effective. EUROPEAN RED MITE **(Metatetranychus ulmi) is on the increase in the Willamette Valley and is** showing resistance to organic phosphates in The Dalles-Hood River orchards, with some damage reported. The TWO-SPOTTED SPIDER MITE (Tetranychus telarius) and A SPIDER MITE (Eotetranychus willamettei) are a constant threat and control measures must always be taken. ROSY APPLE APHID (Anuraphis roseus) and an APPLE PANDEMIS (Pandemis pyrusana) were not a problem in 1955. BLACK CHERRY APHID (Myzus cerasi) was a very serious pest and caused a great deal of damage throughout the summer in the Willamette Valley. It was less important in The Dalles, Hood River, and Medford than in 1954. GREEN PEACH APHID (Myzus persicae) was moderately abundant at Medford but high mortality resulted after extremely low temperatures in March.

Spotty infestations appeared at The Dalles and Hood River, where this pest is showing some resistance to the organic phosphates. In this same area, A MOTH (*Mineola scitulella*) was more numerous in untreated orchards than in 1954. CLOVER MITE (*Bryobia praetiosa*) appeared on fruit trees throughout the State and some damage was reported to cherry and plum. There was a late emergence of CHERRY FRUIT FLY (*Rhagoletis cingulata*). Populations were normal and control excellent everywhere cherries are grown commercially. There has been a noticeable increase of the PEACH TWIG BORER (*Anarsia lineatella*) at Milton-Freewater. APPLE AND THORN SKELETONIZER (*Anthophila pariana*) adults were very common in unsprayed orchards in Benton County. In Union County, PEAR RUST MITE (*Epitrimerus pyri*) caused severe bronzing of foliage. AN ERIOPHYID (*Vasates fockeui*) damaged prunes and young cherry at several locations in the Willamette Valley. At Milton-Freewater this pest caused russeting of plum fruit. A BLOTCH LEAF MINER (*Lithocolletis crataegella*) was found in great abundance on apple at Monroe and later in Benton County. An outbreak of what seemed to be this same species also occurred at Medford. It now appears that a complex of several species are involved. A MITE (*Diptacus gigantorhynchus*) appeared in abundance on plum near Talent. A PLUM APHID (*Anuraphis helichrysi*) damaged leaves in several orchards in the Medford area and control was very difficult since the aphid curled the developing leaves and remained nearly inaccessible.

In general, there was a lower population of nut insect pests in 1955 than for several years. Predator and parasite levels appeared normal. WALNUT APHID (*Chromaphis juglandicola*) and A WALNUT APHID (*Panaphis juglandis*) were not as abundant or serious in 1955 as they were in 1954. Low populations could not be ascribed to weather conditions which were quite similar to those of 1954. A FILBERT APHID (*Myzocallis coryli*) was present in localized infestations compared to the generally high populations of the previous year. A LEAF ROLLER (*Archips rosana*) caused minor damage throughout the filbert growing area of the Willamette Valley except for some serious damage at the southern range of the pest in Lane County. It is believed that injury by the FILBERT BUD MITE (*Phytoptus avellanae*) was more serious in 1955 than ever before. A likely reason for the increased damage may be the large numbers of susceptible varieties of filberts (loose budded) now coming into bearing. EUROPEAN FRUIT LECANIUM (*Lecanium corni*) was a problem necessitating control measures in one orchard near Silverton.

Small Fruit Insects

STRAWBERRY ROOT WEEVILS are declining in importance somewhat, because of the general rise in the use of soil insecticides by growers. The WEEVIL (*Peritelinus oregonus*) has been found injuring single fields in Washington and Polk Counties. OMNIVEROUS LEAF TIER (*Cnephasia longana*) is declining in importance on strawberries due to control programs, and possibly, to the increase in numbers of parasites introduced from Europe. STRAWBERRY APHID (*Pentatrichopus fragaefolii*) population was normal, a considerable decrease from 1954. MEADOW SPITTLEBUG (Philaenus leucophthalmus) has decreased in numbers as a result of the strawberry aphid dusting program, as has the WESTERN STRAWBERRY LEAF ROLLER (Anacampsis fragariella). An unusual occurrence was the discovery of PEA LEAF WEEVIL (Sitona lineata) ragging the leaves of strawberries in fields at Hillsboro and Salem. STRAWBERRY CROWN MOTH (Ramosia bibionipennis) in strawberries was not of economic importance in the Willamette Valley floor which is the normal condition. It is causing damage in two hill plantings however. ORANGE TORTRIX (Argyrotaenia citrana) is building up on boysenberries and blackberries in the central Willamette Valley where it did some injury in the early fall. OBLIQUE-BANDED LEAF ROLLER (Archips rosaceana) was not of economic importance in 1955. RASPBERRY ROOT BORER (Bembecia marginata) continued to cause economic damage throughout the Willamette Valley as in previous years -- particularly in boysenberries. A GOOSEBERRY BORER (Xylocrius agassizi) caused injury to plantings in Polk and Linn Counties. STRAWBERRY CROWN MOTH (Ramosia bibionipennis) injured blackcap raspberries in Yamhill and Clackamas Counties. CURRANT FRUIT FLY (Epochra canadensis) was a minor pest due to the regular spray program. However, it is estimated that control practices for this one insect are saving growers $40,000.00 a year in Marion County alone.

Vegetable Insects

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was more abundant in Malheur County than for many years and required control on an estimated 10 percent of the total acreage. GREEN PEACH APHID (Myzus persicae) appeared late but built up damaging populations in the Klamath and Ontario area on potatoes. There appeared to be a normal amount of damage by aphids, especially CABBAGE APHID (Brevicoryne brassicae) to cabbage, brussels sprouts, and broccoli in Multnomah County. CARROT RUST FLY (Psila rosae) extended its range southward and was a serious problem to growers in the Eugene area but less than in 1954. Cutworms, especially BLACK CUTWORM (Agrotis ypsilon) and the VARIEGATED CUTWORM (Peridroma margaritosa) caused minor injury to sweet corn and table beets in the Willamette Valley. BEAN APHID (Aphis fabae) was less abundant in 1955 than in 1954. Some LYGUS (Lygus sp.) damage was noted to beans in Malheur County and several fields were down-graded because of puncture injury. WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) was more numerous than in 1954. General feeding on a variety of crops caused an undetermined amount of damage. This pest injured tomatoes in the northern Willamette Valley. SYMPHYLIDS continue to attack many vegetable crops but again estimates of crop loss are difficult to determine. Control of these pests has been sporadic. CORN EARWORM (Heliothis zea) was generally lower than in 1954. Counts averaged 23 percent infestation in Hermiston, 80 percent at Milton-Freewater (but only tip injury), and 60 percent at Boardman (usually 100 percent late in the season). Very little damage occurred in the Willamette Valley. ONION MAGGOT (Hylemya antiqua) continued to cause serious damage. A SAP BEETLE (Meligethes nigrescens) appeared late in the Willamette Valley and did not cause excessive damage. AN APHID (Aphis sp.) built up in bean fields in Multnomah County late in August and control measures were necessary. No specimens of TOMATO RUSSET MITE (Vasates lycopersici), which destroyed a planting of tomatoes at Milton-Freewater in 1954, were taken in 1955. Living larvae of the EUROPEAN CORN BORER (Pyrausta nubilalis) were intercepted at a Portland elevator in a corn shipment from the Midwest.

Specialty crop insects

Insect pests of mint were present in normal populations. A new mint growing area in Jefferson County is developing with a quarantine in operation designed to retard the development of pests and diseases of mint. Individual plants in several of these new fields were found being defoliated by large numbers of a PHALAENID (Heliothis phloxiphaga). TWO-SPOTTED SPIDER MITE (Tetranychus telarius) and the HOP APHID (Phorodon humuli) increased greatly on hops late in the season. The cranberry industry valued at $300,000.00 in 1955 suffered considerable loss by the BLACK-HEADED FIREWORM (Rhopobota naevana). Individual bogs along the northern coast and near Coos Bay were damaged because of a poor control program. BLACK VINE WEEVIL (Brachyrhinus sulcatus) killed out cranberry vines in several bogs near Bandon.

Forest Insects

(Abstracted from the 1955 "Report of Forest Insect Surveys in Oregon and Washington Season of 1955," published by the Pacific Northwest Forest and Range Experiment Station, U. S. Forest Service.)

DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) and SPRUCE BUDWORM (Choristoneura fumiferana) continued to be the most destructive pest to Oregon Forests. However, the outbreaks of these and most other forest pests are the smallest in several years. Epidemic infestations of the SPRUCE BUDWORM are confined to the Blue Mountains area. In this area 620,947 acres were treated at a cost of $1.06 per acre. SPRUCE BUDWORM mortality averaged 97.5 percent. DOUGLAS-FIR BEETLE epidemic infestations totaled 640,160 acres in 1955, a great reduction over the 1954 acreage of 4,440,540 and the 1953 epidemic infestation of 4,153,900 acres. Heaviest infestations of this beetle were found on the Smith River drainage in the Coast Range, and the Clackamas River and Middle Fork Willamette River drainage in the Oregon Cascades. Various conditions are expected to further reduce the DOUGLAS-FIR BEETLE populations in future years. Salvage operations are continuing with good progress reported. No direct control of the DOUGLAS-FIR BEETLE is in progress or planned. Infestation of the WESTERN PINE BEETLE (Dendroctonus brevicomis) is at the lowest point since records began. BALSAM WOOLLY APHID (Chermes piceae) has been observed attacking and killing grand fir in the Willamette Valley since 1930, and killing alpine fir in the Oregon Cascade Mountains; but 1955 marks the first year that measurable damage by this insect has been recorded in Oregon. This damage has occurred in the Mount Hood and Willamette National Forests.

Total number of infested acres by the following insects: BALSAM WOOLLY APHID, 35,690; DOUGLAS-FIR BEETLE, 640,160; ENGLEMANN SPRUCE BEETLE, 1,940; FIR ENGRAVER, 31,160; MOUNTAIN PINE BEETLE, 66,580; PINE ENGRAVER, 46,950; SILVER FIR BEETLE, 4,320; SPRUCE BUDWORM, 541,310; WESTERN PINE BEETLE, 31,560. Total 1,400,660.

Ornamental Insects

A HOLLY BUDMOTH (Rhopobota naevana ilicifoliana) has become established in Clackamas and Multnomah Counties. This is a considerable range extension for the pest in Oregon, heretofore reported only from the northern coastal counties. Several commercial plantings were damaged in the Portland area since control measures have not been directed against this pest. HOLLY LEAF MINER (Phytomyza ilicis) was found infesting a planting near Reed College. An intensive survey disclosed that the infestation is limited almost entirely to the city proper. No commercial plantings are involved. SOFT SCALE (Coccus hesperidum) has increased in importance on a number of host plants in the Willamette Valley. A severe freeze in mid-November is likely to result in reduced populations of this pest in 1956. PULVINARIA SCALES (Pulvinaria spp.), OBLIQUE-BANDED LEAF ROLLER, FALL WEBWORM, and ELM LEAF BEETLE caused usual amount of injury. SATIN MOTH (Stilpnotia salicis) outbreak in Sherman County resulted in serious defoliation of silver poplar. WESTERN TUSSOCK MOTH (Hemerocampa vetusta) appeared in heavy but local infestations on flowering plum in the Portland area. TENT CATERPILLARS (Malacosoma disstria and to a lesser extent M. pluviale) were in local abundance and generally in areas other than in 1954. The most serious defoliation occurred on non-economic hosts, abandoned orchards and shrubs, and roadside vegetation. Parisitism (84 percent) occurred in Rickreall area but none was evident in Clatsop, Tillamook or Columbia Counties. Damage by ORANGE TORTRIX (Argyrotaenia citrana) was normal except for a few heavy infestations in greenhouse products and an unusual local outbreak on holly in Portland. In the latter case, the larvae were found feeding at the base of the berries causing fruit-drop. BARK BEETLES (Phloeosinus sequoiae and P. rubicundulis) continue to attack Port Orford cedar following initial injury by a fungus (Phytophthora sp.). Loss has been extensive to ornamental plantings in Salem and at several locations in Coos County. OAK GALL WASPS continue to discolor foliage and kill branches throughout the Willamette Valley. CYCLAMEN MITE (Steneotarsonemus pallidus) was an increasingly important greenhouse pest in 1955. Many reports of insect damage were reported by the State nursery inspectors. Those which were repeatedly brought to attention are mentioned below. BLISTER BEETLES and Diabrotica sp. damaged lilac and dahlia blooms in several locations. WIREWORMS injured gladiolus and iris plantings throughout the Willamette Valley. Reports from Curry County indicated that CUTWORMS have been more numerous in lily plantings and LILY WEEVIL (Agasphaerops nigra) was present during the summer in unusually large numbers in most plantings of Easter lilies. SPRUCE APHID (Aphis abietina) is considered by State nursery inspectors to be the most destructive pest to landscape arrangements throughout Oregon. Extensive defoliation was attributed to this pest in 1955.

Insects Affecting Man and Animals

There were no unusual occurrences of insects affecting man and animals except for increasingly serious outbreaks of infestations of NORTHERN FOWL MITE (*Bdellonyssus sylviarum*) on turkeys and chickens in western Oregon.

Beneficial Insects

First record of quantities of an ALKALI BEE (*Nomia melandri*) was reported. These bees occupy a restricted area from Vale south to Adrian where they are responsible for over 60 percent of alfalfa seed production in the area. The bee is also found north of the area mentioned above, but in very restricted localities. Growers report low bumble bee populations in several of the blueberry producing areas have resulted in reduced yield. Losses of honey and wild bees were unusually high in 1955 (highest for several years) due to poor spray practices in some areas. As high as 70 percent of the bees were killed in several cases where legumes were sprayed for pest control. State Department of Agriculture inspected 1,325 apiaries of which 14 percent were found diseased. Of 22,336 colonies inspected, 435 were infected with American foul brood and 269 with European foul brood. A large number of colonies, 1,965, were found dead, largely from starvation brought on by the very late arrival of the spring season.

Stored Grain Insects

High humidity and high moisture content in harvested grains provided favorable conditions for increases in stored-grain pests in western Oregon during 1955. A large majority of the feed mills and storage elevators inspected were infested in this area. In eastern Oregon, infestations were generally less serious and not as numerous. Inspection of 132 premises for KHAPRA BEETLE gave negative results. The one premise in Oregon known to have received stored grain (seed) from a KHAPRA BEETLE infested seed company in California was thoroughly inspected on two occasions during 1955. A survey in western Oregon showed infestation in 52 samples of grain as follows: SAW-TOOTHED GRAIN BEETLE in 39 samples, RED FLOUR BEETLE in 20, GRANARY WEEVIL in 19, FLAT GRAIN BEETLE in 19, RICE WEEVIL in 18, A GRAIN BEETLE (*Ahasverus advena*) in 9, A HAIRY FUNGUS BEETLE (*Typhaea stercorea*) in 4, and *Anthicus floralis* in 4.

Household and Wood Product Insects

More than the usual number of inquiries were made by home owners concerning control of CARPET BEETLES. Indications are that A SUBTERRANEAN TERMITE (*Reticulitermes hesperus*) infestations are increasing. These infestations have been reported from nearly every part of the State. Many homes in Willamette Valley were invaded by large numbers of STRAWBERRY WEEVILS and a few homes in the Hillsboro area by PEA LEAF WEEVIL (*Sitona lineata*).

SUMMARY OF INSECT CONDITIONS - 1955

WASHINGTON

Reported by C. A. Johansen and D. H. Brannon with the cooperation of USDA, Extension Service, and Experiment Station personnel throughout the State.

Introduction

A number of unusual insect conditions occurred in Washington during 1955. The season was late in eastern Washington; pollination studies on apples at Dayton indicated that full bloom was 2 weeks later than in 1954; other activities which were reported to be 2 weeks later than in 1954 were: cherry fruit fly emergence at Prosser, tuber flea beetle emergence in the Yakima area, pea aphid migration to peas from alfalfa in the Walla Walla area, and green peach aphid colonization on potatoes in the Yakima area. Spring was cool but extremely dry in most of eastern Washington, causing some crop losses in grain and peas. Directly or indirectly, these conditions may have caused the development of unusual, heavy outbreaks of grasshoppers in Adams, Stevens, Pend Oreille, and Whitman Counties, and cutworms in Whitman, Asotin, Garfield, Walla Walla, Franklin, and Benton Counties. Infestations of pea aphid and tree fruit aphids were unusually light. In western Washington, 45 days without rain, from late July till the end of August in the Puyallup Valley, apparently materially reduced the slug problem in vegetable crops although not on forage crops. No unusual insect outbreaks were reported from western Washington, apparently most pest populations were about "normal."

Field and Forage Crop Insects

GRASSHOPPERS (85-90 percent Melanoplus mexicanus) were extremely abundant and severely damaging to 150,000 acres of range and dry land crops in Whitman and Adams Counties by mid-July. The control program instituted was highly successful in all areas treated. RED-BACKED CUTWORM (Euxoa ochrogaster) was damaging alfalfa fields in the Yakima and Kittitas Valleys by early May. ARMY CUTWORM (Chorizagrotis auxiliaris) caused extensive losses of barley, wheat, and rape in Whitman, Walla Walla, and Asotin Counties in late May and in June. YELLOW-HEADED CUTWORM (Apamea amputatrix) and GLASSY CUTWORM (Crymodes devastator) severely damaged a field of bluegrass raised for seed in Garfield County. Cutworms also damaged bluegrass plantings in Spokane County and in the Yakima Valley. SOD WEBWORMS (Crambus topiarius and C. plumbifimbriellus) continued to be a problem on bluegrasses and fescues raised for seed in Spokane County. The first LYGUS BUGS (Lygus elisus and L. hesperus) activity was noted in alfalfa fields in Yakima Valley and Whitman County in early May. Population peaks of both adults and nymphs occurred in red clover and alfalfa in the Pullman area about mid-July. Another PLANT BUG (Labops hesperius) damaged fescue grown for seed in the Spokane area early in June. A MEALYBUG damaged bluegrass in Spokane and Garfield Counties. STRAWBERRY

ROOT WEEVIL (*Brachyrhinus ovatus*) larvae seriously injured roots of hops and peppermint in the Yakima Valley. Larvae were first noted in early May and the adults by late May. A MINT FLEA BEETLE (*Longitarsus waterhousei*) damaged mint fields in the Vancouver area early in July. BROWN WHEAT MITE (*Petrobia latens*) caused moderate to severe damage to dry-land wheat and barley in Yakima County again in 1955. WHITE-LINED SPHINX (*Celerio lineata*) was more abundant than usual on forage and grain in the Palouse area, but still a minor pest. Severe injury to orchard-Ladino pastures was caused by slugs (*Deroceras reticulatum*, *Arion ater*, *Prophysaon andersoni*, and others) in western Washington. ALFALFA WEEVIL (*Hypera postica*) was found for the first time in Washington near Clarkston in early June and typical injury was observed on alfalfa at Pullman later the same month.

Tree Fruit Insects

There has been a gradual reduction in CODLING MOTH (*Carpocapsa pomonella*) populations (as indicated by trap records in the Yakima area) over the last 3 years, undoubtedly influenced by the cool season in 1954 and the late season in 1955. The alleged resistant area first noted in 1953 has not caused serious difficulty where timing and application of sprays was carefully conducted. EUROPEAN RED MITE (*Metatetranychus ulmi*) started hatching early in May and maintained high populations in some areas throughout the season. A MITE (*Tetranychus mcdanieli*) infestation did not develop until the first of August in the Yakima Valley. Heavy CLOVER MITE (*Bryobia praetiosa*) infestations occurred in some orchards. MITE PREDATORS (*Typhlodromus* sp.) apparently are increasing on tree fruits in the Yakima Valley. Eggs of the PEAR PSYLLA (*Psylla pyricola*) started hatching in the Wenatchee area late in April. This insect was more abundant than usual in some orchards. Although emergence of the CHERRY FRUIT FLY (*Rhagoletis cingulata*) was late, trap records showed that 64 percent of the season's flight was out by harvest time at Prosser and 99 percent by harvest at Yakima. WALNUT HUSK FLY (*Rhagoletis completa*), which was recorded for the first time in Washington in 1954, was 3 weeks later than last year with the heaviest flight trapped during the third week of August in the Yakima area. A RUST MITE (*Vasates fockeui*) was reported numerous in April, injurious in July, and still increasing on cherry in August in the Wenatchee area. This pest has been more troublesome in recent years and control measures need further development to be effective. APHID populations on tree fruit were generally low this season.

Small Fruit Insects

GARDEN SYMPHYLID (*Scutigerella immaculata*) populations fed extensively on the root systems of strawberries, raspberries, and other berries in Clark and Spokane Counties. New plantings of strawberries are destroyed in the first or second year. Symphylids were also observed attacking the ripe fruits of strawberries. Infestations of CYCLAMEN MITE (*Steneotarsonemus pallidus*) were less severe on strawberries in the Puyallup Valley than in 1954. With the use of soil treatments instead of baits for control of ROOT WEEVILS (*Brachyrhinus* spp.) on strawberry, A STRAWBERRY WEEVIL (*Nemocestes incomptus*) has become a problem in Skagit and Snohomish Counties, especially destroying plantings in newly-cleared land. A ROOT WEEVIL (Sciopithes obscurus) often occurs under the same conditions. A NITIDULID (Glischrochilus quadrisignata) damaged sound strawberries in the Pullman area. This is the first record of this insect feeding on strawberries in Washington. RASPBERRY CROWN BORER (Bembecia marginata) damage occurred in Yakima and San Juan Counties. BLACK-HEADED FIREWORM (Rhopobota naevana) second brood larvae caused damage in some cranberry bogs in Pacific County during August.

Vegetable Crop Insects

PEA LEAF WEEVIL (Sitona lineata) infestations in peas were sizable in Pacific County and areas of northwestern Washington. POTATO APHID (Macrosiphum solanifolii) wintered on winter-hardy weeds in the Yakima Valley and was unusually abundant on these plants in early May. CUTWORMS (Euxoa ochrogaster and others) were abundant and damaging on tomatoes, corn, and potatoes in the Yakima and Kittitas Valleys during May and June. EUROPEAN EARWIG (Forficula auricularia) first brood nymphs found in early June, infestations were spreading later in June, and populations reached epidemic proportions by early August in the Yakima and Kittitas Valleys. This pest caused damage to potatoes and other vegetables. The first adult PEA WEEVIL (Bruchus pisorum) was collected in the Palouse area June 3, infestations were generally low through the season, and adults entered hibernation in ponderosa pine during October. PEA APHID (Macrosiphum pisi) increased on alfalfa along the Snake River in May, especially near Penawawa. It was definitely proven to winter on alfalfa in the Pullman area. Populations were late in developing, remained low in numbers, and very little incidence of enation mosaic was observed in the Walla Walla area. GARDEN SYMPHYLID was reported injuring beet seedlings in the Sumner area in June, corn and carrots in San Juan County in July, cabbage and beans in the Spokane area in September, and various crops in the Vancouver area throughout the season. This pest was first recorded in the State in 1953 but undoubtedly has been here for some time, and is now known to occur in 17 counties. CABBAGE MAGGOT (Hylemya brassicae) was abundant on crucifers in the Puyallup Valley in June. ONION MAGGOT (Hylemya antiqua) caused severe losses of green bunching onions in the same area in October. A ROOT APHID (Thecabius populi-monilis?), first recorded on lettuce roots in the Puyallup Valley in 1953, caused heavy losses of head lettuce in that area in October.

Ornamental and Florist Crop Insects

NARCISSUS BLUB FLY (Lampetia equestris) first adults observed in San Juan County May 1, and started emerging in the Puyallup Valley in late May, the latest ever recorded. TENT CATERPILLARS (Malacosoma spp.) larvae were first observed April 10 and adults on July 15 in San Juan County. SATIN MOTH (Stilpnotia salicis) larvae had partially defoliated poplars near Sumner by the first of July. Infestations of ROSE APHID (Macrosiphum rosae) were heavy on garden roses in the Puyallup Valley during May, June and July. ELM LEAF BEETLE (Galerucella xanthomelaena) adults began to damage elm foliage in the Yakima Valley during May. A HOLLY BUDMOTH (*Rhopobota naevana ilicifoliana*) was abundant and damaging to holly in Snohomish County by the first of July. AN APHID (*Myzus dianthi*) was very numerous on greenhouse-grown carnations in the Puget Sound area during the fall.

Insect Pests of Man and Animals

LICE (*Haematopinus eurysternus*, *Linognathus vituli*, and *Bovicola bovis*), CATTLE GRUBS (*Hypoderma bovis* and *H. lineatum*), and the HORN FLY (*Siphona irritans*) were found to be the most important pests of cattle, in that order, according to a recent survey.

Beneficial Insects

The only serious losses of HONEY BEES (*Apis mellifera*) reported were caused by insecticide applications to mint fields in the Yakima Valley. There was very little injury due to applications to tree fruits or alfalfa. An ALKALI BEE (*Nomia melanderi*) emerged late, but pollination was generally good in alfalfa fields of the upper Brownstown-Harrah area during mid-summer. Alkali bee adults were plentiful in Walla Walla County during the first of August.

Stored Grain Insects

Grains at harvest time have been quite dry and the incidence of insects in the 1955 crop appears to be lower than in 1954, except in western Washington. The cold fall and winter has helped to limit populations of the common species: RED FLOUR BEETLE (*Tribolium castaneum*), SAW-TOOTHED GRAIN BEETLE (*Oryzaephilus surinamensis*), GRAIN BEETLES (*Laemophloeus* spp.), and GRANARY WEEVIL (*Sitophilus granarius*). During the early spring (1954 crop), heavy populations of several species were found in eastern Washington in which the grain was out of condition. There appears to be a sequence of development in this area of saw-toothed grain beetle, followed by the red flour beetle, and terminating with the flat grain beetle. RICE WEEVIL (*Sitophilus oryza*), which has been rather rare previously, was collected in Asotin County.

Miscellaneous Insects

CLOVER MITE (*Bryobia praetiosa*) was an irritating household pest in Yakima and Kittitas Valleys, the Wenatchee area and the Pullman area throughout April, May and June. A TERMITE (*Reticulitermes hesperus*) was found infesting a home in Spokane.

SUMMARY OF INSECT CONDITIONS - 1955

ILLINOIS

Prepared by Clarence E. White from data collected by White, H. B. Petty, Steve Moore, and Cooperators throughout the State.

Clover and Alfalfa Insects

CLOVER LEAF WEEVIL (Hypera punctata) populations were lower in 1955 than in 1954. Peak larval populations were reached in southern Illinois April 4 to 7, central Illinois April 15 to 20, and northern Illinois April 25 to 30. The State average at the peak was approximately 16 living larvae per square foot compared with about 25 per square foot in 1954. The average dropped to 3 per square foot by May 5. The average number of adults found in the State each week between March 2 and May 12 varied from 0 to 0.13 per square foot. The average weekly population in the northern half of the State between April 18 and July 21 varied from 0 to 5 per 100 sweeps of a 15-inch net. Disease was an important factor in reducing the population in both 1954 and 1955. Of all the larvae found throughout State April 18 to 21, 6.5 percent were dead; April 25 to 28, 4.2 percent were dead; May 2 to 5, 22.6 percent were dead. A survey throughout the State May 2 to 5 showed 25 percent of the cocoons contained prepupae which had died of disease. It is predicted that in 1956 the clover leaf weevil population will be less than in 1955.

PEA APHID (Macrosiphum pisi) was relatively scarce in 1955. The greatest number found per square foot during March and April was 4 compared with 196 during the same period in 1954. Peak populations were reached in southern area about May 9 to 12, central area about June 7 to 10, and northern Illinois about July 11 to 14. State average reached peak of 5,432 aphids per 100 sweeps June 7 to 10, then declined rather rapidly to 104 per 100 sweeps July 18 to 21. LESSER CLOVER LEAF WEEVIL (Hypera nigrirostris) populations were similar to those found in 1954. Peak of the overwintered population did not occur until first of May when State average of 15 adults per 100 sweeps were found. This was nearly a month later than this peak was reached in 1954. Larvae again infested 100 percent of the clover stems in some fields as in 1954. The average number of stems infested in the State May 16 to 19 was 58 percent. VARIEGATED CUTWORM (Peridroma margaritosa) was very scarce with only a few scattered fields being infested. The highest number of CUTWORMS found in any field was 9 per square foot and the highest average for a section of the State was 1.69 per square foot. This includes all species found: P. margaritosa, Protorthodes insincta, Lacinipolia renigera. By comparison the highest field average for P. margaritosa alone in 1954 was 54 per square foot and sectional averages ranged from 10 to 30 per square foot. WEEVIL (Sitona sp.) populations averaged from 0 to 120 adults per 100 sweeps last of April and 0 to 240 adults per 100 sweeps first of July. TARNISHED PLANT BUG (Lygus lineolaris) adult populations in clover and alfalfa fields varied from 0 to 1,260 per 100 sweeps in the northern half of State. Peak was reached in July or later. Nymphs of this and other species (Adelphocoris rapidus and A.

lineolatus) varied from 0 to 1,500 per 100 sweeps in the northern half. First nymphs observed in central area April 18. RAPID PLANT BUG (*A. rapidus*) adults were first observed in western Illinois May 25. There were as many as 200 per 100 sweeps in some fields in northern 2/3 of State. ALFALFA PLANT BUG (*Adelphocoris lineolatus*) adults were first observed during the season in the northern half of State. Populations reached as high as 440 per 100 sweeps in some alfalfa fields. POTATO LEAFHOPPER (*Empoasca fabae*) - The first *Empoasca* female was found in southeastern Illinois April 4, in central area April 20, and in northern Illinois April 27. The first *E. fabae* males were found May 11 when 2 were found on potatoes near Collinsville, 1 near Sycamore and 3 near Urbana on alfalfa. Populations of both males and females increased suddenly about June 1, and a survey made June 3 to 15 showed a definite band of high populations running diagonally across State from about Pittsfield and Jerseyville on the west to Watseka and Danville on the east. North of this band, populations in 16 fields averaged 150 per adult *fabae* per 100 sweeps. South of the band, populations in 15 fields averaged 123 adults per 100 sweeps. In the band, populations in 19 fields averaged 595 per 100 sweeps. Nymphs, believed to be *fabae*, averaged about 900 per 100 sweeps for the State July 18 to 21. An estimated 1,915 acres were treated for control of this pest. As high as 350 adults per 100 sweeps were found in soybeans in late July and early August.

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*) nymphal populations were lower in most sections than in 1954. Some fields in northern Illinois, however, had more than 1 nymph per stem and needed to be treated. Nymphs began to emerge in eastern and southern Illinois April 11 to 14. The State average, however, was only 0.05 nymphs per stem April 18 to 21, and between April 25 to May 19 varied from 0.23 to 0.26 nymphs per stem. The annual fall survey showed an increase in adult populations in the western and northwestern areas and also in the Iroquois, Champaign, Moultrie, Cumberland County areas. All other areas showed a decrease. The greatest increase was in northern Illinois. It is predicted that 60 percent of all clover and alfalfa fields in the Stephenson, Ogle, Kane and McHenry Counties area will need to be treated next spring. A narrow band extending from Whiteside County to Will County then north into Lake County and south into Iroquois County will be expected to have a moderate infestation where 10 percent or more of the fields will benefit from treatments next spring. LEAF ROLLERS or leaf tiers (mainly *Amelia pallorana*) were very common in alfalfa fields; as many as 140 larvae per 100 sweeps July 18 to 21. In 1 field in central Illinois 70 percent of alfalfa stems were found damaged May 5. ALFALFA CATERPILLAR (*Colias philodice eurytheme*) populations ranged as high as 100 per 100 sweeps in the northern half of the State July 11 to 14. FORAGE LOOPER (*Caenurgina erechtea*) larvae ran as high as 90 to 100 per 100 sweeps in some fields in the northern half of the State. CLOVER ROOT BORER (*Hylastinus obscurus*) were found only in the northeastern area, 0 to 14 adults per 100 sweeps between April 25 and June 3. Adults of a WEEVIL (*Tychius stephensi*) varied from 0 to 80 per 100 sweeps, May 9 and July 21. They were found only in the northeastern area. GRASSHOPPERS (mainly *Melanoplus femur-rubrum*, *M.*

mexicanus and M. differentialis) - Nymphs appeared in the fields about first of May and gradually increased until first half of July when as many as 3,040 nymphs per 100 sweeps were found in some fields. The annual adult survey showed the greatest populations to be in the northern half of the State with heaviest concentration centered in Bureau and LaSalle Counties where as many as 50 adults per square yard were found in some fields. The average number found in Bureau County was 19.7 per square yard. Other counties in northern Illinois averaged from 1 to 8 adults per square yard. It has been estimated that 148,835 acres of legumes, grasses, etc., were treated to control this pest. It was further estimated that the treatments paid a profit of $1,358,108 to the farmers of the State. Possibly two-thirds of that acreage and profit could be credited to clover and alfalfa fields. GREEN CLOVERWORM (Plathypena scabra) occurred generally and populations reached as high as 600 per 100 sweeps in some fields August 22 to 24. CLOVER HEAD CATERPILLAR (Grapholitha interstinctana) adults ranged from 0 to 80 per 100 sweeps throughout the northern half of State May 16 to July 21. BLACK BLISTER BEETLE (Epicauta pennsylvanica) adults were quite numerous in alfalfa fields. Some fields had as many as 600 per 100 sweeps. It was observed eating petals from alfalfa flowers on several occasions. The STRIPED BLISTER BEETLE (Epicauta sp.) ranged as high as 160 per 100 sweeps, and MARGINED BLISTER BEETLE (Epicauta pestifera) ranged up to 20 per 100 sweeps. SPOTTED ALFALFA APHID has not been found in the State. YELLOW CLOVER APHID (Pterocallidium trifolii), however, is known to have been present in the State since 1908. It is estimated a total of 79,535 acres were treated for control of clover and alfalfa insects, other than grasshoppers. The profits received from these treatments, excluding grasshoppers, were estimated at $397,675. In 1954 an estimated 259,545 acres of clover and alfalfa were treated and profits were estimated at $1,997,407. Most of these treatments were for control of the clover leaf weevil, pea aphid, and meadow spittlebug.

Corn Insects

CUTWORMS were active in corn fields the last of May and early June. Up to 32 percent of the plants were damaged in a few fields in central Illinois and replanting was necessary. Damage was not nearly as widespread nor as severe as in 1954 when as much as 65 percent of the plants were damaged in some fields. WIREWORMS were also active the latter part of May and first half of June. Most damage occurred in the central and west-southwestern sections of the State. CORN FLEA BEETLE (Chaetocnema pulicaria) adults found on corn plants from May 16 to August 19 ranged from 0 to 48 beetles per 100 plants from May 16 to June 22, 0 to 160 in mid-July, 0 to 100 in mid-August. TORTRICID larvae, species unidentified, damaged as much as 20 percent of corn plants in marginal rows in some fields bordering grassland in central and eastern Illinois May 23 to June 3. BILLBUG injury was observed on as many as 12 percent of the plants in some fields in central Illinois May 23 - 26 and averaged 2.75. CURCULIONID larvae, believed to be a species of Calendra, were very common, boring in the corn plants just below the tassel in the west-southwest and southwest sections of Illinois in August. NORTHERN CORN ROOTWORM (Diabrotica longicornis) larval damage occurred in scattered fields in the State. A survey in the western area July 6 showed one out of six fields infested, with an average of five larvae per plant. A survey in the northwestern section August 15 to 19 showed the following: an average of 56 adults on the silks of 100 ears of corn with an average of 130 adults per 100 ears in the highest field; SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) adults averaged six per 100 ears and the highest field averaged only 20 adults per 100 ears. This survey also showed 16 percent of the ears damaged by CORN EARWORM (*Heliothis zea*) with the highest field averaging 40 percent damaged ears. CHINCH BUG (*Blissus leucopterus*) nymphs migrated into corn in July and damaged some marginal rows, mainly in northeastern section where up to 1,000 nymphs per plant occurred. The average number of nymphs per plant in the northeast section, however, was only 195 July 11 to 14. GRASSHOPPERS moved into marginal rows of corn in July but no serious damage was reported. It has been estimated that 688,950 acres of soil were treated with insecticides this year. This was mostly land which was planted to corn. The estimated profits from these treatments were $4,372,300. SUGARCANE BEETLE (*Euetheola rugiceps*) adults were unusually abundant around lights in southern area in early September, indicating some damage to corn in that area next spring. EUROPEAN CORN BORER (*Pyrausta nubilalis*) - earliest pupation and emergence was recorded in 1955 approximately two weeks earlier than in any previous years. Ten days of cool wet weather in early June retarded borer development but corn growth continued. By June 20 it was apparent that 10 to 15 percent of the corn could profitably be treated. Actually between 6 and 7 percent was treated. Oviposition of first generation began June 1 and continued into early July. Optimum date of insecticide treatment varied from June 27 to July 4. In central Illinois 11 percent of the fields exceeded 45 inches tall with egg counts ranging from 126 to 260 per 100 plants with 70 to 80 percent egg hatch, and the tassel ratio was 23 to 25. Many of the second generation moths deposited eggs in the fields where they emerged and there was not a distinct selection of fields until after August 15. After this date, moths appeared to concentrate in the late maturing fields. The final populations of overwintering corn borer compared closely to the overwintering populations of 1949. (See CEIR 5 (52):1133).

Soybean Insects

GREEN CLOVERWORM damaged soybeans again in 1955 and an estimated 6,125 acres were treated for control. Profits from these treatments were estimated at $28,175. Populations gradually increased until as many as 30 per 6 feet of row were found in some fields in the northern half of the State August 15 to 19, with an average of 5.8 per 6 feet of row in the northwest section, 6.4 in the central section, 10.4 in the eastern section. GRASSHOPPERS (mostly *Melanoplus* spp.) migrated into marginal rows of soybeans in June and July and did considerable damage to some fields in early August when populations reached as high as 500 per 100 sweeps. BEAN LEAF BEETLE (*Cerotoma trifurcata*) adults appeared in fields in late May or early June and gradually increased in numbers until as many as 5 per 6 feet of row or 200 per 100 sweeps were found August 15 to 19.

An estimated 950 acres of soybeans were treated for control of this pest. SEED CORN MAGGOT (Hylemya cilicrura) damaged soybeans in two fields in late May or early June.

Small Grain Insects
ARMYWORM (Pseudaletia unipuncta) was not as abundant in 1955 as in 1954. In 1954 an estimated 170,125 acres were treated for control of armyworms with profits from treatments estimated at $1,724,485. The 1955 acreage treated was estimated at 76,780 and the profit at $529,776. Of the 1955 acreage 59,620 acres were wheat land and 17,160 acres were grassland. A flight of moths was observed in southwestern Illinois April 12. Larvae were first reported in small grain in southern Illinois April 25 to 28 and in the central part of the State May 16 to 19. The peak of larvae abundance occurred about the same time in both 1954 and 1955. Many second to fourth instar larvae were found in the southern two-thirds of the State May 31 to June 3. CHINCH BUG (Blissus leucopterus) populations were less than expected. Timely rains aided in keeping the population low. Adults were present in numbers up to 1.2 per linear foot in some small grain fields May 2 to 5 and by May 12 as many as 20 per linear foot of drilled row, and damaging oats in spots in Grundy County. As many as 300 nymphs per linear foot of row were found in some fields in the southwestern section of the State May 31 to June 3. An estimated 22,130 acres were treated to control this pest, with profits from these treatments estimated at $128,625. In 1954 an estimated 68,965 acres were treated and the profit was estimated at $509,811. The 1955 fall survey showed that nine counties rated severe or very severe in 1955 compared with 19 counties with this rating in 1954. HESSIAN FLY (Phytophaga destructor) caused broken tillers in some wheat fields in June but no extensive damage was reported. The annual survey made at wheat harvest time showed an increase in populations throughout the State. In 1954 the State average was 1.3 percent of the tillers infested. The State average in 1955 was 5.5 percent. Heaviest infestations were found in the northwest, southwest, and southeast sections of the State. As many as 44 percent of the tillers were infested in some fields. WHEAT JOINTWORM (Harmolita tritici) larvae were found early in the southwest and southeast sections of the State. The average number of tillers infested throughout the State this year was 0.7 percent as determined by the annual survey, compared with 2.3 percent in 1954.

ENGLISH GRAIN APHID (Macrosiphum granarium) was present throughout the State from May 2 to June 10. Greatest numbers were found May 31 to June 3 when some wheat fields averaged as many as 5,000 aphids per 100 sweeps of a 15-inch net and 255 aphids per wheat head. SAWFLY (probably Dolerus unicolor) larvae averaged 30 per 100 sweeps of a 15-inch net or 3 per 5 linear feet of row in one wheat field in western Illinois May 12 and five per 100 sweeps in a wheat field in eastern Illinois May 9. GRASSHOPPERS (Melanoplus spp.) in wheat fields varied from 0 to 50 per 100 sweeps and in oats from 0 to 340 per 100 sweeps the first of June.

Bluegrass Insects

CORN FLEA BEETLE adults have been collected every month of the year by sweeping bluegrass. From 0 to 830 beetles per 100 sweeps were found the first half of April, up to 1,235 adults per 100 sweeps November 12, in May and July from 0 to 52. CHINCH BUG adults occurred up to 120 per 100 sweeps in late April but were very scarce by the first of June. BRONZED CUTWORM (Nephelodes emmedonia) larvae were very common throughout the northern one-half or two-thirds of the State in April. Up to 36 larvae per 100 sweeps of a 15-inch net were found in some places in western area. ARMYWORM first and second instar larvae averaged 10.7 per 100 sweeps of a 15-inch net with as many as 40 per 100 sweeps in the southwestern area May 2 to 5. May 16 to 19 average number of larvae per 100 sweeps in the northwest, northeast, west, and central sections respectively was 8.3, 0, 30, and 12.1. They apparently decreased everywhere after that time except in the northwest section where an average of 11.3 first to second instar larvae were found per 100 sweeps June 13 to 16 with as many as 70 per 100 sweeps in some locations. SAWFLY (probably Dolerus unicolor) larvae averaged 27.4 per 100 sweeps in the northeast section and 1.3 per 100 sweeps in the eastern section May 9 to 12. Up to 48 per 100 sweeps were found in some places in the northeast section. GRASSHOPPER nymphs (mostly Melanoplus spp.) were very numerous in the northern one-half to two-thirds of the State from late May to at least July 21. A weekly average exceeding 200 nymphs per 100 sweeps was found in each of the following sections of the State at least one week during that period: northwest, west, central, east, and west-southwest sections. As many as 3,400 nymphs per 100 sweeps of a 15-inch net were recorded June 13 to 16.

Vegetable Insects

BEET LEAFHOPPER (Circulifer tenellus) adults numbered one per 750 sweeps in horse-radish in the East St. Louis area May 11. They were more abundant the last of August than at any other time during the summer. ONION MAGGOT (Hylemya antiqua) began increasing in onion sets in Cook County about May 15 or 20. CARROT BEETLE (Ligyrus gibbosus)severely damaged carrots, other vegetables, and various flowers by June 10. CORN EARWORM eggs averaged approximately one per fresh silk on market corn at East St. Louis by June 17. TOMATO APHIDS were exceptionally abundant on commercially-grown tomatoes in northern area and many fields were being treated by June 24. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) damaged some fields of tomatoes in northern area by June 24. A SAP BEETLE (Carpophilus savi) and possibly others were reported as rivaling the corn borer and corn earworm as a pest of market and canning corn in some sections.

Insects of Shade Trees and Ornamentals

A moderate flight of SPRING CANKERWORM (Paleacrita vernata) moths occurred at Champaign March 11. Larvae defoliated some trees by May 6 and severely damaged elms in western area by May 13. TENT CATERPILLAR (Malacosoma spp.) eggs were hatching in northern Illinois April 26. Larvae were very common in Kane County, northeastern Illinois, May 9 to 12, and defoliation of wild cherry trees occurred. ELM LEAF BEETLE (Galerucella xanthomelaena) was damaging Chinese elms in southern area by June 3. BAGWORM (Thyridopteryx ephemeraeformis) seriously defoliated some shrubs and trees. GREEN JUNE BEETLE (Cotinis nitida) adults caused damage, especially to peaches in some areas.

Stored Grain Insects

In general, stored grain insects were as abundant in 1955 as in 1954. INDIAN-MEAL MOTH (Plodia interpunctella) was commonly found infesting the surface of grain from early July until mid-October. Other insects which occurred in moderate numbers in wheat and other grain were rice weevil, saw-toothed grain beetle, cadelle, flat grain beetle, yellow mealworm, and red flour beetle. ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) again was present throughout the southern one-half of the State but was of significant economic importance only in the southern one-third of the State. A survey revealed that about 36 percent of the farmers in the State use control practices against stored grain insects.

Livestock Insects

A total of 98 Hereford cows were examined for lice in southern area in November. About 16 percent were found infested with SHORT-NOSED CATTLE LOUSE (Haematopinus eurysternus) and 104 head of Hereford cows and bulls showed 73 percent positive lesions of A MANGE MITE (Chorioptes bovis).

Beneficial Insects

LADY BEETLES (mainly Hippodamia convergens, H. paranthesis, and Coleomegilla fuscilabris) were very abundant in 1955. As many as 340 adults per 100 sweeps were found in clover and alfalfa fields in the northern half of State May 2 to 5 when overwintered adults reached peak abundance. New generation of adults reached peak abundance in clover and alfalfa in that area by mid-July or later. As many as 600 adults per 100 sweeps were found in the west-southwestern area. The greatest number of adults found in small grain fields was 120 per 100 sweeps in late May. LACEWINGS (Chrysopa spp.) were very numerous as was A FLOWER BUG (Orius insidiosus) and SYRPHID FLIES. These benificial insects undoubtedly destroyed large numbers of eggs and young of destructive insects and played a large part in keeping the populations of destructive insects at a low level.

USDA, AGRL RESEARCH SERVICE
ENTOMOLOGY RESEARCH BR
FRUIT INSECTS SECTION
3-7-55 PLANT INDUSTRY STATION
IPS BELTSVILLE, MD